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SEQUENCE LISTING

<110> Department of plant biochemistry

<120> Fatty acid desaturase gene from plants

<130> Sequence_desaturase

<140> 50669

<141> 1999-08-31

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<170> PatentIn Vers. 2.0

<210> 1

<211> 1285

<212> DNA

<213> Calendula officinalis

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<221> CDS

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Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile Leu Glu Arg Val Pro
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gtc gat cca ccg ttc acg tta agc gat ctg aag aaa gcg att cct acc 152
Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys Lys Ala Ile Pro Thr
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cat tgc ttt gag cga tct gtc atc cgg tca tca tac tat gtt gtt cat 200
His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser Tyr Tyr Val Val His
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gat ctc att gtt gcc tat gtc ttc tac tac ctt gca aac acg tat atc 248
Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu Ala Asn Thr Tyr Ile
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cct ctt att cct aca cct ctg gct tac cta gca tgg ccc gtt tac tgg 296
Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala Trp Pro Val Tyr Trp
70 75 80 85

ttt tgt caa gct agc atc ctc acc ggc ctc tgg gtc atc ggt cac gaa 344
Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp Val Ile Gly His Glu

tgt ggt cac cat gca ttt agc gac tac cag ttg att gat gac att gtt	392		
Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu Ile Asp Asp Ile Val			
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Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro Tyr Phe Ser Trp Lys			
120	125	130	
tat agc cac agg aat cac cac gcc aac aca aat tca ctc gat aac gat	488		
Tyr Ser His Arg Asn His His Ala Asn Thr Asn Ser Leu Asp Asn Asp			
135	140	145	
gaa gtt tac att cct aaa cgt aag tcg aag gtc aag att tat tcc aaa	536		
Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val Lys Ile Tyr Ser Lys			
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ctt ctt aac aat cca ccc ggg cga gtg ttc act ttg gtg ttt cgg ttg	584		
Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr Leu Val Phe Arg Leu			
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act tta gga ttt ccg tta tac ctc tta act aat atc tcg ggc aag aaa	632		
Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn Ile Ser Gly Lys Lys			
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tac ggg agg ttt gcc aac cac ttt gat ccc atg agt cca att ttc aac	680		
Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met Ser Pro Ile Phe Asn			
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gat cgt gaa cgc gtt caa gtt ttg cta tcc gat ttc ggt ctt ctc gct	728		
Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp Phe Gly Leu Leu Ala			
215	220	225	
gta ttt tat gca atc aag ctt ctt gta gca gca aaa ggg gca gct tgg	776		
Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala Lys Gly Ala Ala Trp			
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gta atc aac atg tac gca att cca gta cta ggt gta agc gtg ttc ttc	824		
Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly Val Ser Val Phe Phe			
250	255	260	
gtt ttg atc aca tat ttg cac cac acc cat ctc tca ctc cct cat tat	872		
Val Leu Ile Thr Tyr Leu His His Thr His Leu Ser Leu Pro His Tyr			
265	270	275	
gat tca acc gaa tgg aac tgg atc aaa ggc gcc tta tca aca atc gat	920		
Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala Leu Ser Thr Ile Asp			
280	285	290	
agg gat ttc ggg ttc ctg aat cgg gtt ttc cac gac gtt aca cac act	968		

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Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His Asp Val Thr His Thr
 295 300 305

cac gtc ttg cat cat ttg atc tca tac att cca cat tat cat gca aag 1016
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 Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly Glu Tyr Tyr Lys Ile
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 Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His Lys Gly Val Phe Trp
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 35 40 45

Tyr Tyr Val Val His Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu
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Ala Asn Thr Tyr Ile Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala
 65 70 75 80

Trp Pro Val Tyr Trp Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp
 85 90 95

Val Ile Gly His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu
100 105 110

Ile Asp Asp Ile Val Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro
115 120 125

Tyr Phe Ser Trp Lys Tyr Ser His Arg Asn His His Ala Asn Thr Asn
130 135 140

Ser Leu Asp Asn Asp Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val
145 150 155 160

Lys Ile Tyr Ser Lys Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr
165 170 175

Leu Val Phe Arg Leu Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn
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Ile Ser Gly Lys Lys Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met
195 200 205

Ser Pro Ile Phe Asn Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp
210 215 220

Phe Gly Leu Leu Ala Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala
225 230 235 240

Lys Gly Ala Ala Trp Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly
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Val Ser Val Phe Phe Val Leu Ile Thr Tyr Leu His His Thr His Leu
260 265 270

Ser Leu Pro His Tyr Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala
275 280 285

Leu Ser Thr Ile Asp Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His
290 295 300

Asp Val Thr His Thr His Val Leu His His Leu Ile Ser Tyr Ile Pro
305 310 315 320

His Tyr His Ala Lys Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly
325 330 335

Glu Tyr Tyr Lys Ile Asp Arg Thr Pro Ile Phe Lys Ala Met Tyr Arg
340 345 350

Glu Ala Lys Glu Cys Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His
355 360 365

Lys Gly Val Phe Trp Tyr His Lys Met
370 375